heart and lungs appeared. When, in the instance of dogs, the poison was given dry with the food, the operation of the poison soon became apparent upon the mucous membrane; there were observed vomiting, and an excessive itching in the mouth, so that the animals rubbed their lips and mouth with their feet, and rubbed their nose upon the ground. With this, also, arose profuse salivation. The principal points observed on dissection of the poisoned animals were, fulness with blood of the membranes of the brain, of the heart, of the larger venous trunks, and of the liver; fulness of the gall-bladder, and a collection of mucus in the air-passages. Nothing was noticed respecting the condition of the kidneys. In one case, air was found in the veins of the membranes of the brain.—*B. and For. Med.-Chirurg. Rev.* July, 1854, from *Archiv. für Pathol. Anat. und Physiol. und für Klinische Medicin,* Bd. vi. Heft 3.

9. *Comparison between Chloroform and Cold as Anæsthetics.*—By James Arnott, M. D. The last number of the *Medical Times and Gazette* records another death from chloroform. Within the last three months, three deaths have happened from the same cause in the London hospitals alone, and in the hands of careful men, experienced in the use of this agent. Yet, as the fatality is small in comparison with the number of cases in which chloroform is used, every one *hopes* that such an event will not happen in *his* hands. Is it proper, however, to incur any amount of risk when the same object—the prevention of pain—can be attained by other means perfectly devoid of danger, and possessing many other advantages? Does not the surgeon err who continues to use chloroform unnecessarily, even should he himself never so cause death, by countenancing the employment of a measure that every month proves fatal in the hands of some other surgeon? Does he not, in fact, so participate in causing these deaths? It is merely a question of time. The moment some eminent patient dies from chloroform, unnecessarily administered, that moment will it be deemed imperative to substitute a safer anæsthetic. Why should not this time be anticipated, and such an event prevented? Why should not a stop be at once made to the afflicting mortality from this cause? For what can be more distressing to the relatives of a person so killed, or to the surgeon who administers the fatal poison, than the consciousness that its administration was altogether unnecessary.

Benumbing cold has been proved to be a safe and perfect anæsthetic in the immense majority of surgical operations. It would have prevented death in more than three-fourths of the fifty or sixty cases that have proved fatal from the use of chloroform. Among others who have afforded evidence of these powers of intense cold, I may mention M. Velpeau, in France, and Mr. Paget, in this country. The French journals have at various times reported M. Velpeau's use of cold for this purpose in the *Hôpital La Charité;* and the *Medical Times and Gazette* of the 1st inst. reports an operation in which it was successfully employed by Mr. Paget. In a paper, in the *Medical Times and Gazette* of the 25th of March, I have mentioned how cold is applied to produce anæsthesia; the design of the present communication is to make a comparison between it and chloroform.

It is commonly supposed that the application of benumbing cold must be a difficult and troublesome proceeding; much more so, in both respects, than the administration of chloroform. The very contrary is the truth. Whether the cold is applied by keeping in contact with the part, for a few seconds, a refrigerating mixture of ice and salt, contained in a gauze bag or a thin metallic vessel, or by touching it with a thick piece of copper that has been dipped in such a mixture, nothing can be easier; and it is impossible to fail. Different from chloroform, the anæsthetic effect is complete within a minute; and, as it has no unpleasant consequences, the surgeon is released from those protracted attentions which he is so often called upon to give in allaying the nervous symptoms that frequently follow the administration of chloroform. He requires no assistant; and, as the anæsthetic brings no new danger of its own, his mind is undisturbed, during the operation, from the anxiety which he would suffer from chloroform on this account.

The expense of either plan is so trifling that it does not deserve mention with respect to private practice; but, with reference to hospitals, where the strictest economy is required, it may be worth while to state that cold does not cost a twentieth part of the price of chloroform. In using a frigorific mixture for remedial purposes in dispensary practice, I have made two pennyworth of the materials answer for several cases in succession. Mr. Ferguson, of Giltspur Street, has had benumbing vessels elegantly made of silver; but, however well suited for private practice these may be, a rougher apparatus will answer. On one occasion, in employing congelation for phlebitis, I borrowed for the purpose the net which confined the hair of the attendant nurse; and the principal ingredient cost as little as the instrument which contained it, for, there being a snow-storm at the time, it was gathered from the door-step.

The perfect safety from cold, and the anæsthesia from chloroform in the deepest operations, are the great respective advantages of these agents. Of the thousands of times intense cold has been used, not once has it been followed by any more untoward event than a slight cutaneous irritation. If the skin is merely benumbed, no redness follows the application; if congelation of the adipose matter under the skin is caused, a redness comes on, which may continue for a day or two. But, as explained in the paper already referred to, in the *Medical Times and Gazette*, this is the very contrary of inflammation. Instead of being a symptom of inflammation, the redness shows that a condition of the part exists rendering inflammation impossible. And in this safety produced by congelation, there is an advantage not inferior in importance to the insensibility. For, to the erysipelas and phlebitis following surgical operations, the greater number of deaths occasioned by them is to be attributed.

The anæsthesia from chloroform in deep operations can only be called perfect under the supposition, still contested, that the unconsciousness of the patient afterwards, that he has submitted to an operation, proceeds from having felt no pain, and not merely from having forgotten it. To judge from his struggles and cries, the latter would be the conclusion.

The anæsthesia produced by chloroform is by no means so certain as the anæsthesia produced by cold, because, in the latter case, there is no unconsciousness. But, in deep operations, it is only the incision of the skin which is very painful. The most eminent orthopædic practitioner of the day states, in a letter to the writer, that in the operations he is conversant with, the only source of pain is the incision of the skin; and perhaps no surgeon has had so good an opportunity of forming an opinion on this point. But all will agree that, if the insensibility of the skin were suspended, there would be very little suffering from the cutting of the deeper parts. So little, indeed, that it becomes a question whether life should be endangered by suspending it. The pain attendant on tightening the ligatures of arteries could be easily obviated by the momentary previous application of a congealing copper ball.

Chloroform, by causing unconsciousness, prevents the patient's assisting the surgeon in his operation, and apprising him of mistakes that may happen in its performance. The public has just been reading, with horror, the account of attempts made to drag a stone from an unopened bladder, by a forceps introduced through the wound, and grasping both stone and bladder. But for the insensibility induced by chloroform, the screams of the unfortunate child would at once have indicated the error; and the system, perhaps, is more to be blamed than the surgeon.

In the act of administration, and afterwards, certain inconveniences attend both measures. Chloroform, besides producing unconsciousness, causes a sensation of choking, and is often succeeded by headache, sickness, and prostration. Cold, applied only to the degree of benumbing (which may often be sufficient), causes no unpleasant sensation; but when congelation is produced, there is a sense of pricking, like that caused by mustard, both at the time, and after the return of the circulation. This subsequent smarting may be entirely prevented by a moderate application of cold; and that which first takes place may be lessened, if thought worth while, by a little management.

In recapitulating the subject, we may say, that although, in deep operations, the insensibility produced by chloroform may be greater than that produced by cold (unless this were applied in the successive stages of the incision), in all superficial operations, which constitute the immense majority, cold is superior to chloroform in the circumstances of safety, ease of application, or the saving of time and trouble, certainly of producing anæsthesia, and, lastly, in the power it possesses of preventing subsequent inflammation. Surely, a conscientious and humane surgeon will not allow the prejudice against novelty or innovation to outweigh so decided a superiority. Anæsthesia will, no doubt, henceforth be a required element of every surgical operation; but chloroform, fortunately, is not the only mode of producing it.—*Med. Times and Gaz.* Aug. 5, 1854.

10. *Charcoal Coverlet for the Prevention of Smell from Gangrenous Sores.*—In some cases of hospital phagedæna recently under his care, in St. Bartholemew's Hospital, Mr. Wormald made an ingenious and very useful application of the disinfecting powers of charcoal. It is well known that dry charcoal will effectually absorb any noxious or offensive gas which can be made to pass through it. On this power, Dr. Stenhouse's disinfecting respirators depend for their efficiency. The difficulty in applying it in hospital practice has, however, arisen from the difficulty of keeping it at the same time dry and in a uniform layer around the part giving rise to effluvia. Dr. Wormald's plan consists in sprinkling freely between two sheets of cotton wool a tolerably thick layer of powdered charcoal, and then "quilting" them together in small segments, so that the powder is retained securely in its place. The pads thus prepared may be of any size, according as required to wrap round the end of a stump, or to cover a superficial ulcer. The sloughing sore having been dressed in the ordinary manner, and a little lint or wool so placed as to absorb any discharge which may flow, over all is laid the charcoal quilt, which is then lightly confined by a bandage. It forms, in addition to its disinfectant properties, a very soft and comfortable envelop, more especially if the sore be in such a part that the patient is obliged to lie on it.—*Med. Times and Gaz.* July 1, 1854.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

11. *Treatment of Fever by large Doses of Quinia.*—Dr. F. Corbyn states that from his long experience of the treatment of fever by large doses of quinia, when this disease broke out with such violence in its typhoid form at Anarkallie and the Citadel, he urged on the attention of medical men, when he went through their hospitals in August, the immediate necessity of prescribing quinia in large doses, as twenty grains, for instance, in each. Their apprehension was that the expenditure by such a practice would be so great that they could never obtain an adequate supply; but he soon allayed their fears, by demonstrating the fact that the expenditure would be 50 per cent. less than in the ordinary practice of administering frequent and, after all, useless small doses of that invaluable medicine. One or two doses, he asserts, when large, will eradicate the fever at once, if combined with good effective purgatives. He found that in H. M.'s 90th, small doses were being prescribed; but that in the Horse Artillery, on the contrary, the very opposite treatment was pursued.

Dr. Mackinnon thus remarks on the success of this method; his success was wonderful:—

"The cases of intermittent fever were so numerous, that I had full opportunity of trying every mode of administering quinia, and I have come to the conclusion that the most effective and the most economical mode of administering it, is to give it in a single large dose, at or towards the termination of the sweating stage. It is now my practice to give ʒss at that period, and I have never seen it fail to put a stop to the disease at once. I have given the same quantity six or eight hours before the accession of the paroxysm; but I found its effect uncertain; it often checked the paroxysm, but it sometimes failed to do so; in the latter case, however, though one paroxysm succeeded the dose, I